

# The Postwar Furniture Market and the Factors Determining Demand

**C**ONSUMER outlays for furniture are currently at their postwar high. After a brief decline in the spring of 1949, the strong demand for these products was demonstrated by a renewal of the advance which has characterized most of the period since the close of the war.

This firmness in the market for furniture is clearly associated with the high disposable personal income in recent years, and with the unprecedented activity of private residential construction, since any expansion in the number of dwellings creates a corresponding need for furnishing those units. For much of the period since the end of the war, the backlog of demand, in conjunction with the accumulation of liquid savings and the relatively low volume of consumer debt, has also contributed significantly to expenditures for furniture.

## *Furniture market approximately \$3 billion*

Purchases of household furniture comprise an important category of consumption expenditures. In the year 1949, nearly \$2.8 billion were spent for furniture, not including housefurnishings or household appliances and equipment. This was only slightly below the \$2.9 billion expended in 1948, and in dollar value was more than double the total purchased in any prewar year. During the early months of 1950, expenditures reached a new high as they exceeded a \$3.0 billion annual rate.

In quantity terms also, purchases of furniture during the first quarter of 1950 were higher than ever. Volume was nearly 30 percent above the prewar high of 1941, and more than 50 percent greater than in 1929 and 1939.

Chart 1 shows the proportion of disposable income that consumers have spent in acquiring these items. The chart reveals the well-known tendency characterizing durable-goods expenditures to fluctuate in relative importance with the swings of business activity. In peacetime years of full employment, outlays for furniture have accounted for about 1.5 percent of spendable income, this proportion dropping appreciably when business turns down.

## *Expenditures related to the construction cycle*

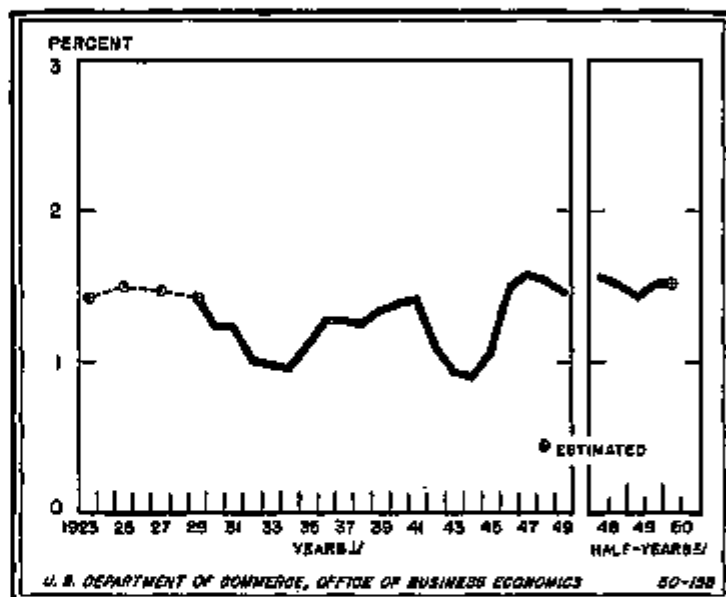
Also visible in the chart is the effect on furniture outlays of high activity in residential construction. Thus, in the years immediately preceding the war—years which were comparable to the 1920's in terms of aggregate economic activity, but not in the number of houses built—purchases of furniture accounted for a perceptibly smaller part of consumer income than in periods when large numbers of new houses were erected, such as the past 3 years and the decade following the First World War.

This relationship of furniture buying to residential construction is also evident in quantity terms. However, the greater importance of dollar expenditures for furniture in periods of active building is in part a reflection of the fact that furniture prices tend to be high relative to other prices in such periods, both because of the greater demand and

because there is some competition between the construction and furniture industries for materials and labor.

The price factor is, of course, a basic element in any study of demand, since, other things being equal, lower prices bring more consumers into the market. By and large, the

**Chart 1.—Personal Consumption Expenditures for Furniture as a Percentage of Disposable Personal Income**



1 Data for 1924, 1925, and 1926, are not available.

2 Percentages are based on seasonally adjusted data; figures for the first half of 1950 were estimated on the basis of first quarter data.

Source of data: U. S. Department of Commerce, Office of Business Economics.

way furniture prices relate to prices of other goods and services is more significant to the analysis than the absolute level of furniture prices. The ratio between furniture prices and prices of all consumer goods and services has been used as a measure of the relative price movements. However, it should be recognized that this measure is not completely satisfactory, primarily because of continuing changes in quality.

Although furniture prices have slowly declined relative to other consumer prices since the end of the war, the ratio is substantially above its prewar values, as the following table indicates.

**Ratio of Furniture Prices to Average Consumer Prices (1939 = 100)**

1923	1929	1939	1949	1950	1951	1952	1953
118	106	93	100	105	139	132	129

## *Population growth*

The changing size and composition of the population is also relevant to the market for furniture, as for other categories of consumer expenditure. Although the rate of increase in the population is primarily relevant to the long-

NOTE.—MR. JACOBS AND MR. WINSTON ARE MEMBERS OF THE BUSINESS STRUCTURE DIVISION, OFFICE OF BUSINESS ECONOMICS.

term outlook, population developments also have a bearing on the short-run picture.

A high rate of family formation, which normally is associated with a housing boom, is one of the elements involved in the relation between furniture expenditures and residential construction activity. The rise in the birth rate following the war is also significant, and is reflected in the increased production of infants' and children's furniture indicated in the table.<sup>1</sup>

Table 1.—Value of Shipments of Household Furniture, 1947, Compared With Value of Production in 1939

Item	1939 production	1947 shipments	Percent increase
	<i>Millions of dollars</i>	<i>Millions of dollars</i>	
Total wood household furniture, except upholstered.....	275.2	307.3	220
Living room, library, sunroom and hall furniture.....	64.8	290.1	345
Dining room and junior dining room furniture.....	24.5	112.6	290
Bedroom furniture.....	102.2	248.0	238
Infants' and children's furniture.....	8.3	40.7	490
Kitchen furniture and cabinets.....	28.2	64.2	107
Porch and lawn furniture.....	2.3	8.0	248
Furniture-in-the-white (unupholstered).....	0	15.4	2,407
Other wood household furniture.....	40.3	38.3	-5
Total household furniture, upholstered.....	151.4	459.1	177
Living room, library, sunroom and hall furniture (including studio couches, sofa-beds, etc.).....	140.7	370.3	167
Other household furniture, upholstered.....	10.7	42.8	306
Total metal household furniture, except upholstered.....	72.0	219.2	328
Metal kitchen furniture and cabinets.....	14.1	144.1	922
All other metal household furniture.....	57.9	74.1	106

Source: U. S. Department of Commerce, Bureau of the Census.

## Measuring Furniture Demand

In attempting to obtain a quantitative appraisal of the factors which influence the amounts consumers purchase of a commodity or service, there are two approaches possible. The first approach surveys a sample of consumers at a given time, obtaining for each individual—or other type of consuming unit, such as household or family—the amount he has expended or the amount he intends to spend, as well as other information relevant to his consumption habits: for example, his income, liquid assets and occupation.<sup>2</sup> The other method determines historically in terms of aggregate data how total expenditures for the commodity have fluctuated with total disposable income and other important variables. Each of these methods has its advantages and disadvantages, and generally it is desirable for a thoroughgoing study of demand to use both approaches when possible, and to check the results of each against the other.

Aggregate figures constitute the only reliable information about furniture which covers an extended period of time, and the statistical analysis employed here is based on them. The rather meager material on furniture available from surveys is considered later.

### Factors in the present study

The variables which enter into the following analysis of furniture expenditures are aggregate disposable personal income, the value of new private residential construction, an index expressing the changes in furniture prices in relation to prices of other consumer items, and the number of house-

holds. As shown in chart 2 on page 10, these variables account for all but a negligible part of the fluctuations in consumer purchases of furniture during the period 1923-40.<sup>3</sup>

Each coefficient in the regression equation expressing this relationship is an estimate of the average percentage change in furniture expenditures per household during the base period when the corresponding variable changed by 1 percent, the other variables remaining unchanged.<sup>4</sup> Thus, with a 1-percent increase in per-household income alone, per-household outlays for furniture were raised by a little more than 1 percent, and a 1-percent rise in residential construction per household was attended on the average by a one-sixth of 1 percent increase in expenditures. Similarly, an increase in furniture prices of 1 percent relative to other consumer prices, income and construction not changing, was accompanied by a decline of one-half of 1 percent in the dollar value of furniture purchases.

Of course, changes in any one of the factors did not take place independently of the others. For example, an increase in residential building was ordinarily associated with a rise in income, which also worked to lift furniture outlays, and with higher prices for furniture relative to other consumer goods and services, which tended toward lower outlays. However, of the single factors, income is by far the most important in accounting for the movements of furniture expenditures, while construction activity and price are secondary, though still significant.

The preceding discussion has been based on consideration of the average household, the "calculated" aggregate expenditures in the chart being derived by obtaining the per-household expenditures from the relationship and multiplying by the number of households. This appears to be the most plausible approach, since stability of consumption patterns is more likely to exist for the average consuming unit than for the population as a whole. The number of consuming units for furniture is probably approximated more closely by the number of households than by the number of individuals, spending units, or even families.

The average household at the present time spends about \$70 a year on furniture. A newly formed household naturally spends much more than this, but the data do not permit a satisfactory estimate of the outlays typical of these new households.

## Alternative relationships

In addition to the analysis presented in chart 2, a number of other relationships were tested. These included, on a current dollar basis, linear as well as logarithmic regressions for aggregate expenditures and per-household expenditures, and similar analyses in constant dollars.<sup>5</sup> The various per-household relationships were about equally satisfactory in accounting for the fluctuations in furniture expenditures during the prewar years, and the expected values calculated for current outlays from these relationships agreed closely.

There was, however, a significant difference in the levels of furniture expenditures indicated for the war period by the logarithmic and linear per-household relationships. The

<sup>1</sup> This table is based on data from the Census of Manufactures in 1939 and 1947. It has also appeared in "The Furniture Industry and Its Potential Market", a booklet issued this year by the U. S. Department of Commerce, Office of Domestic Commerce.

<sup>2</sup> There were two national expenditure surveys in the prewar period: "Consumer Expenditures in the United States, 1928-38" by the National Resources Committee, and "Family Spending and Saving in Wartime," covering 1941 and early 1942, by the U. S. Department of Labor, Bureau of Labor Statistics. The second of these gives average expenditures by income class for detailed categories of household furniture and furnishings. Another family expenditure survey by B. L. S. is being planned. In the postwar period, the annual Survey of Consumer Finances, which is considered later, also provides some expenditure data.

<sup>3</sup> The equation on which the "calculated" expenditures in chart 2 are based is:  $F = 0.0038 Y + 0.0001 P + 0.0001 C$ , where  $F$  is expenditures for furniture in dollars per household,  $Y$  is disposable personal income per household,  $P$  is the value per household of private residential construction, and  $C$  is the ratio of the price index for furniture to the index of prices of all consumer goods and services (1939=100). The multiple correlation coefficient is given by  $R^2 = 0.998$ .

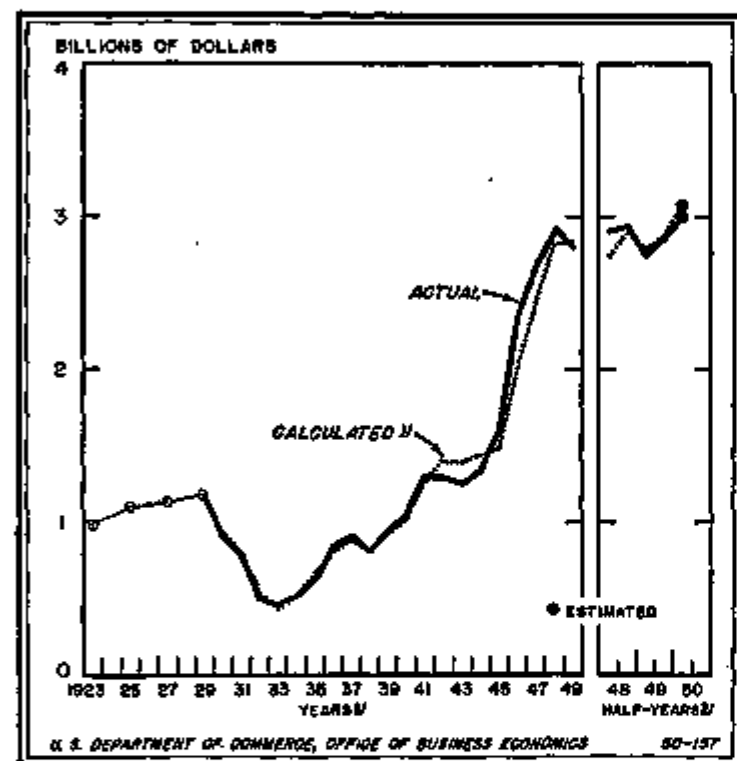
<sup>4</sup> Since the given relation is based on current dollars, the exponents do not measure elasticity of expenditure. An analysis relating per-household expenditures to 1939 dollars to deflated disposable income per household, deflated private residential construction per household, and the ratio of furniture prices to all consumer prices gave an estimate of 1.4 for the income elasticity of furniture expenditure, and -1.2 for price elasticity.

<sup>5</sup> The best fit was obtained with a relationship like that presented in chart 2, except that the index of furniture prices and the consumer price index were employed as separate variables rather than as a single variable in the form of a ratio. The improvement in fit over the relationship actually employed was not quite significant.

linear regression yielded markedly higher calculated values for expenditures during the war years, implying that the aggregate unsatisfied demand in this period was much greater than that indicated by the logarithmic analysis.<sup>4</sup>

The relationships employing aggregate rather than per-household data, which gave correlations nearly as high as the per-household set, indicated somewhat higher expected rates of expenditure in the postwar years. The same was true when a per capita analysis was used. Nevertheless, as noted earlier, the per-household basis was felt to be the most satisfactory.

Chart 2.—Personal Consumption Expenditures for Furniture: Actual and Calculated



<sup>4</sup> Calculated from a linear least squares regression for the years 1923-40, based on disposable personal income and the value of residential construction, both adjusted for changes in the number of households, and on the ratio of furniture prices to the prices of all consumers' goods and services.

<sup>5</sup> Data for 1924, 1926, and 1928, are not available.

<sup>6</sup> Half-yearly totals, seasonally adjusted, at annual rates. Data for the first half of 1950 were estimated on the basis of first quarter data.

Source of data: U. S. Department of Commerce, Office of Business Economics.

The relationship shown in chart 2 accounts for almost all of the observed fluctuation in furniture outlays before the war, and in addition indicates that expenditures in the past few years have been closely in line with the historical pattern. However, there is an implicit assumption, in applying such a statistical analysis to the appraisal of current demand, that relevant factors which are not explicitly introduced have not changed in their joint effect on demand since the period on which relationship is based. Other potentially significant factors which did not have a measurable effect in the prewar years are considered below, in order to investigate their current importance.

### Other influences

Among the factors tending to raise outlays at the present time as compared with the values indicated by the statistical analysis, one of the most important is the great increase since

before the war in individuals' liquid assets. The availability of liquid assets raises consumption generally by reducing the impulse to save out of current income. Also, particularly in the case of durables such as furniture which require large outlays, it makes possible purchases that might otherwise be deferred because buying on time might be undesirable or difficult to arrange.

Another element which may account for higher spending currently is the condition of consumer inventories of furniture. Although the most urgent replacement demand arising out of wartime limitations on production has largely been met, it is rather doubtful that consumer holdings are as yet completely back to normal in quantity or age composition.

Similarly, the effect on furniture demand of the recent high marriage and birth rates, following a decade of relatively low rates, is also likely to be in an upward direction. Such fluctuations are already represented to some extent in the quantitative relationship, which is on a per-household basis.

The apparent decrease in income concentration over the period of analysis—in part the result of changes in the tax structure—has probably not been important, since a change in the income distribution will not affect aggregate expenditures if the relation of expenditure with income is linear, and this linearity holds approximately within a range of income accounting for about 90 percent of furniture outlays.<sup>7</sup>

A factor which tends toward lower expenditures currently than is indicated by the relationship is the upward trend in the proportion of households occupying apartments rather than houses. This proportion has been declining somewhat since the end of the war, but it is appreciably higher than in 1940, and even further above 1930.

Again, disposable income in the first half of 1950 has been temporarily raised by the payment of the National Service Life Insurance dividend. Since there is a tendency to save more than the usual proportion of such nonrecurring income, the "calculated" expenditures obtained by treating these payments as ordinary income may be somewhat too high.

A number of other elements may be cited as having some relevance to the analysis, although the direction of their influence is less clear. The increasing average age of the population and the shift from rural to urban areas are examples of factors which may alter expenditure patterns over a long period of time. Also, there is the intangible but nonetheless important matter of tastes, particularly as these are influenced by more widespread use of new styles and materials.

There is little indication that the net effect of these factors not covered by the statistical relationship is significant at the present time. Among these should be included the growth in consumer credit, which is also probably not of major importance, though it has had some stimulating effect on current demand. This is discussed at greater length below in view of the interest in the subject.

It appears, therefore, that the demand equation presented should be useful in measuring the potential market for furniture. However, a continuing appraisal must be made of the influence exerted by factors not covered by the relationship.

### The Influence of Credit

In the years before the war, consumer installment credit played a constantly increasing part in furniture buying. In the middle twenties about a third of all sales at furniture and house-furnishing stores were subject to installment terms;

<sup>4</sup> The appreciably closer fit for the wartime outlays is obtained from the logarithmic regression largely because construction turns out to receive a greater weight relative to the price factor than in the linear case. The linear relationship, using the same notation as in footnote 3, is  $F = 5.78 + 0.017 Y + 0.004 R - 0.17 P$ , with the multiple correlation coefficient given by  $R^2 = 0.982$ .

<sup>7</sup> This is indicated by the material in the survey on "Family Spending and Saving in Wartime" to which reference was made earlier. It may be noted that the relationship of expenditure to income on a per family basis implied by these figures is in reasonable conformity with the per household relationship employed here.

by 1940 more than half of the sales of these stores were in this category (chart 3). This advance reflected both the institutional growth of lending and financing agencies and changes in the attitude of consumers and merchants toward installment credit.

### Limitations of the data

The information available for measuring the effect of credit buying on furniture demand contains some important gaps. Consumer installment credit consists primarily of installment sales credit and cash loans. Sales credit is granted in connection with installment sales at retail establishments. Cash loans are extended by personal finance companies, credit unions, industrial banking companies and commercial banks. Although these loans are used in large part to finance the purchase of durable goods, data on loans by use are not available, and it is not possible to measure variations in the importance of cash loans for buying furniture.

In addition to installment credit, purchases on charge accounts constitute a part of consumer credit. No continuous series on charge account credit for furniture is available for the years prior to 1939. However, charge account sales of furniture are only about half as large as installment sales, and the duration of indebtedness is much shorter in the case of charge accounts, so that this type of credit forms a relatively small part of credit outstanding.

The installment sales credit figures utilized in this discussion are for furniture and housefurnishings stores. As such they refer to sales of furniture together with other goods carried by these stores, such as appliances, radio and television sets, floorcoverings, etc. However, a substantial amount of furniture is sold by department stores and mail-order houses, some of it on installment terms, and since data on credit sales of these outlets are not broken down by commodity, they are not included in the figures discussed here.

### Influence of installment buying on demand

The growth in importance of installment sales in the prewar period, as revealed by the top panel of chart 3 and the figures in table 2, might have been expected to result in an upward trend in furniture buying. Individuals who are unable to accumulate enough savings to pay cash for items like furniture may still find it possible to buy such goods on time, and to the extent that this happens, a growth in installment credit should add to the demand for furniture.

Such an effect, however, was not observable during the prewar period. The statistical relationship presented, which includes neither a credit variable nor a time trend, yields an extremely close fit and no secular increase in demand over this period is apparent.

Table 2.—Furniture Store Sales, Cash and Charge and Installment  
(Millions of dollars)

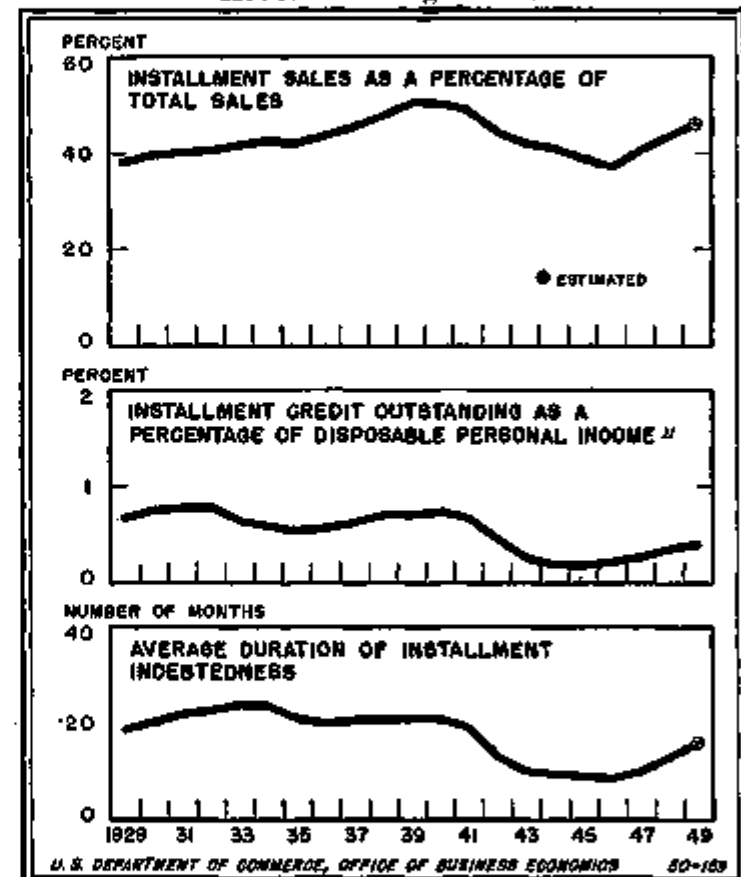
Year	Cash and charge	Installment	Year	Cash and charge	Installment
1929	1,129	401	1940	699	703
1930	882	474	1941	911	876
1931	944	432	1942	1,411	810
1932	358	242	1943	1,034	750
1933	379	298			
1934	419	309	1944	1,161	800
1935	404	358	1945	1,308	837
1936	636	472	1946	2,009	1,175
1937	880	346	1947	2,220	1,517
1938	830	484	1948	2,305	1,739
1939	543	607	1949	2,622	1,722

Source: Board of Governors of the Federal Reserve System, and Office of Business Economics, U. S. Department of Commerce.

It is not clear, of course, that the effect of credit on demand is adequately measured by the proportion of furniture sales on an installment basis. One obvious limitation is the failure to reflect the impact of repayments. Another measure of the potential effect of credit is the trend in installment debt outstanding pictured in the middle panel of chart 3.

Installment credit outstanding at furniture and housefurnishing stores showed no growth relative to disposable income over the decade before the war. It may also be noted that total consumer credit outstanding has moved much like furniture credit both before and after the war. Thus, to the extent that the influence of credit on demand is exerted through the necessity of repaying obligations previously incurred, there would be no measurable secular effect over the prewar years indicated.

Chart 3.—Installment Credit Sales of Furniture and Housefurnishings Stores



Percentages are based on the average of installment credit outstanding at end of month, and annual disposable personal income.

Source of data: Installment Credit, Board of Governors of the Federal Reserve System; Disposable Personal Income, U. S. Department of Commerce, Office of Business Economics.

Such factors as the size of down payment required, the length of the maturity period and the scale of service charges also affect the demand for furniture on credit. Changes in installment terms are revealed in some degree by the bottom panel of chart 3, which gives average duration of indebtedness at furniture and housefurnishings stores. However, there was no trend toward easing of credit terms evidenced by these figures over the prewar period.

### Present position

As chart 3 makes clear, installment credit buying in furniture has not yet recovered from the drop in relative importance it experienced during the war years. Consequently,

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## The Postwar Furniture Market

(Continued from p. 11)

there appears to be room for substantial growth in credit at the present time. It is likely that a return of installment buying to its prewar importance would have a stimulating influence, even through credit developments before the war had no distinguishable effect on furniture demand.

There is evidence, both in the behavior of aggregate expenditures and in reports from trade sources, that the increased availability of credit when regulations ended on June 30, 1949, aided the upturn in furniture sales in the second half of the year. The ratios of installment to total sales at furniture stores and of credit outstanding to disposable income and the average duration of installment indebtedness all advanced significantly. However, they still remained below the values shown prior to the war. Thus, more extensive installment buying may be acceptable to both the retailer and the consumer, provided that the funds necessary to finance the extension are available.

### Expenditure Surveys

In addition to changes in aggregate demand from year to year, variations in demand among groups of consumers are of interest. The relation of consumption habits to the characteristics of the individual consuming unit could best be determined by sample surveys if adequate data were available.

Among the advantages of the survey approach are the ability to determine the direct effect on each consumer's outlays of a variable such as income and, in particular, to take account of the distribution of income, wealth and similar factors; the opportunity to measure factors like consumer inventories, about which usually there is little or no aggregate information available; and the fact that, when these surveys are repeated over a period of time, changes in consumption patterns may be disclosed which would not show up in studies based on over-all data. The major disadvantages of the survey method are its cost, and the well-known fact that some types of data are subject to serious reporting biases in this kind of survey. Moreover, there is little historical information available from such surveys up to the present time.

The Survey of Consumer Finances, carried out annually in the postwar period by the Board of Governors of the Federal Reserve System, differs from earlier public surveys of expenditures in covering purchasing intentions as well as actual outlays. From the information on furniture included in these surveys up to now, it appears that plans to buy

furniture may be useful in indicating movements of actual expenditures, but are not satisfactory for direct estimates of dollar outlays. However, more experience will be required to assess the value of this information in analyzing furniture demand.

The most recent survey, covering buying plans for 1950 of consumers as of the early months of this year, reported that intentions to purchase furniture were little different from those expressed in the corresponding survey a year earlier and relating to 1949.

### Summary

Expenditures for furniture, both in dollar and in quantity terms, are now at a rate surpassing any previous year on record. The major factor accounting for the strength of this demand is the high level of disposable personal income, which has been swelled even further in the first quarter of 1950 by the payment of the National Service Life Insurance dividend. The activity of residential building has also been important in sustaining furniture buying.

A quantitative relationship has been presented for measuring furniture demand on the basis of the prewar expenditure pattern. The current high rate of expenditure appears to be closely in line with this relationship, which makes allowance not only for the level of income and residential construction, but also for the growth in the number of households and for the advances in furniture prices. Compared with the prices of other goods and services, the price of furniture is substantially higher than before the war. However, the ratio of furniture prices to the over-all consumer price index has been tending downward since 1945.

In the years immediately following the end of the war, the backlog demand created by wartime restrictions on furniture production, together with the liquid assets accumulated by consumers during the war, had helped to push expenditures beyond the values indicated by the historical pattern. However, there is little indication that this backlog is still of great importance at present prices, although there may well be a larger-than-normal replacement demand at lower price levels.

It is also noteworthy that installment sales of furniture currently form a smaller proportion of all furniture sales than in the period 1939-41, despite the sizable increase of the past few years in installment credit outstanding. Moreover, installment credit outstanding is lower relative to disposable income than at any time during the period 1929-41. Consequently, there is little reason to expect that installment credit will be a limiting factor on furniture sales for some time to come.

## National Income and Product in the First Quarter of 1950

(Continued from p. 7)

Transfer payments, apart from the veterans' insurance dividends discussed above, were raised about \$½ billion, at annual rates, by expansion of unemployment compensation benefits. The apparent contradiction between this increase and the rise in seasonally adjusted employment is attributable largely to concomitant growth of the labor force and perhaps also to other factors related to the coverage and administration of the unemployment-insurance programs.

### TEMPORARY RISE IN PERSONAL SAVING

The large block of Federal individual income tax collections of year-end settlements on the previous year's liabilities declined substantially in 1950 as compared with corre-

sponding collections in 1949, but this drop was approximately offset by a reduction in refunds. Accordingly, net personal taxes varied but slightly from the fourth quarter of 1949 to the first of this year, and disposable income followed closely the movement of total personal income.

Consumption expenditures did not keep pace with the spurt in disposable income. As a result, personal saving is shown in table 3 to have risen from an annual rate of \$11 billion in the fourth quarter to \$18½ billion in the first. Predominantly, of course, the rise represented saving—much of it doubtless temporary—of the N. S. L. I. payments. Thus the increase in saving does not indicate a change in the basic propensity of consumers to spend, which is obviously high. It simply reflects the fact that the spending of the insurance refunds will be spread over a longer time than their receipt. Accordingly, consumer expenditures in the second quarter will be influenced by the delayed effects of the disbursements through March, as well as by additional payments subsequent to that date.